REMARKS

The claimed invention determines signal impairment correlations for use in received signal processing. Broadly, the claimed invention adapts model fitting parameters using a fitting process to fit the modeled impairment terms, as scaled by the model fitting parameters, to the measured received signal impairment correlations. In other words, the claimed model fitting parameters are adjusted based on measured impairment correlations to "fit" the modeled impairment terms to the measured impairment terms.

The Office Action mailed 2 October 2008 allows claims 39 – 55, but maintains that Nielsen (US2002/0080863) anticipates independent claims 1, 35, 36, and 56 under §102(b). In particular, the examiner asserts that the deficiencies in Nielsen cited by the applicants do not appear in the claims. To clarify, the applicants amend independent claims 1, 35, 36, and 56 to explicitly require adapting the model fitting parameters to fit the modeled impairment terms, as scaled by the model fitting parameters, to the measured received signal impairment correlations, where the modeled impairment correlations comprise one or more model impairment terms scaled by the corresponding model fitting parameters. The applicants also amend dependent claims 2 – 4, 7 – 10, 23, 25, 28, 30, 33, 34, 57, and 58 to correspond to the amendments made to the independent claims.

Nielsen does not teach or suggest the claimed fitting process. Instead, Nielsen describes a trial-and-error process for determining combining weights for a RAKE receiver to achieve a desired signal-to-noise ratio (SNR). In Nielsen, an Adaptive Generalized Matched Filter (AMGF) weight determination module determines combining weights by varying candidate combining weights until the SNR of the RAKE receiver output reaches a peak value (see

Abstract). More particularly, Nielsen uses different total noise covariance matrices $\mathbf{R}_u$, where $\mathbf{R}_u$ may be calculated as the sum of a predetermined impairment $\mathbf{R}_{IND}$ and a measured impairment $\mathbf{R}_{DEP}$, both of which are scaled as a function of a scaling factor r_o, to determine different sets of combining weights $\mathbf{w}$. The AMGF module generates the different total noise covariance matrices by varying r_o while holding $\mathbf{R}_{IND}$ and $\mathbf{R}_{DEP}$ constant. For each of the resulting sets of combining weights $\mathbf{w}$, Nielsen determines a RAKE receiver output $\mathbf{z}$ and a corresponding SNR. Nielsen selects the combining weights $\mathbf{w}$ that produce the maximum SNR at the RAKE receiver output. See at least ¶s [0040] and [0042] – [0046].

It is important to note that Nielsen incrementally varies a scaling factor (e.g., r_o) applied to a measured impairment (e.g., $\mathbf{R}_{DEP}$) to generate the combining weights necessary to meet a desired quality of service (e.g., SNR). Nielson self-evidently does not fit modeled impairment correlations to measured impairment correlations. Even if *arguendo* Nielsen's process could be described as some sort of fitting process, as asserted by the examiner, Nielsen's process still does not scale **modeled** impairment terms to fit to a **measured** impairment correlation, as recited in the claims. In other words, Nielsen's scaling factor (e.g., r_o) scales a measured impairment instead of the claimed modeled impairment terms, and Nielsen does not fit the scaled correlation to a measured impairment correlation, as required by the claimed invention. As such, Nielsen does not teach or suggest adapting model fitting parameters used to scale model impairment terms to fit the model impairment terms to measured impairment correlations.

For at least this reason, the pending claims are patentably distinct over the cited art. The applicants respectfully request that the examiner reconsider all rejections and issue a Notice of Allowance. If any issues remain unresolved, the applicants request that the examiner call the undersigned so that any such issues may be expeditiously resolved.

Respectfully submitted,

COATS & BENNETT, P.L.L.C.

Dated: 7 November 2008

Jennifer K. Stewart
Registration No.: 53,639

1400 Crescent Green, Suite 300
Cary, NC 27518
Telephone: (919) 854-1844
Facsimile: (919) 854-2084